

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
NORTHERN DIVISION

KIM ZUZULA, Personal Representative of  
the Estate of STEVEN ZUZULA, Deceased,

Plaintiff,

v.

Case Number 01-10082-BC  
Honorable David M. Lawson

ABB POWER T&D COMPANY, INC.,

Defendant.

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**OPINION AND ORDER DENYING MOTIONS BY PLAINTIFF AND DEFENDANT  
TO EXCLUDE TESTIMONY FROM EXPERT WITNESSES**

The parties have each filed a motion to exclude the testimony of the other party's expert witness who each intend to offer opinion testimony on the merits of a design and a theory of causation in this products liability case arising from the death of Steven Zuzula. Zuzula was electrocuted on February 18, 1999 while installing an industrial fuse in high-voltage electrical switching gear designed and manufactured by the defendant, ABB Power T&D Company, Inc. At the time of the accident, Zuzula worked for a power plant, Midland Cogeneration Venture ("MCV"), which owned and maintained the electrical switching gear. The Court has reviewed the reports submitted by the respective witnesses pursuant to Federal Rule of Civil Procedure 26(a)(2) together with their depositions, and has heard the arguments of the parties through their respective counsel in open court on October 23, 2002. The Court finds that the parties have submitted sufficient information to permit the Court to adjudicate the motions. *See Greenwell v. Boatwright*, 184 F.3d 492, 498 (6th Cir. 1999) (holding that the district court need not conduct a separate evidentiary hearing to adjudicate a so-called *Daubert* motion). The Court concludes that the

parties each have established an adequate foundation according to Federal Rules of Evidence 104 and 702 and the applicable decisional authority, and therefore the Court will deny both motions to preclude the respective witnesses from testifying.

## I.

MCV operates a plant in Midland, Michigan that generates electrical power for consumption by industrial facilities. In 1987-88, MCV purchased eleven industrial power generation units from an ABB affiliate. These units consist of eleven large generators and their associated equipment, which includes high-voltage switches, transformers, electrical boxes, fuses, and other high-voltage electrical components. Each power generation unit has a “DD module” – a four-drawer, high-voltage, metal-clad cubicle with high-voltage switches and high-voltage fuses. The purpose of the DD switching gear is to connect its generator to power lines which carry electricity to a transformer that, in turn, sends power out of the plant, and to take the generator off line when required.

On February 4, 1999, generator unit 14 was taken off line for servicing. Zuzula’s co-worker, Michael Stahr, removed all of the fuses from the four drawers of power generation unit 14’s DD module. Stahr then left a red tag on the door – an “A” order – indicating that the unit had been taken out of service. According to plant safety rules, a written authorization (another “A” or “B” order) was required before the door and the drawer to the fuse holders could be moved or altered. On February 18, 1999, Michael Bell, another MCV employee, went to reactivate the unit 14 DD module by installing fuses in each drawer. Bell was reinstalling fuses in the west side of the DD module and Zuzula went to install fuses on the east side. Zuzula was electrocuted and killed while replacing the fuses. No one appears to have witnessed the accident.

Unit 14's DD module is located out-of-doors. Two weather doors enclose the Unit 14 cabinet in which the fuse drawers sit. In order to gain access to the "fuse busses" inside the drawers, the two weather doors must be swung open. Then, two spring-loaded handles must be partially rotated. The handles each release a latch that is secured in a slot cut into an angle-iron rail on which the drawer slides. The operator is then able to pull the drawer forward, which disengages it from the energized stabs in the rear of the console. The operator must pull the drawer out far enough so that the latches fall into a forward slot cut into the rails, preventing the drawer from moving back toward the energized stabs. Once the drawer is fully forward, the operator, using a key, can open the access door to the fuse busses. The key not only turns the door lock, but also rotates a half-moon-shaped disc in place which also is intended to prevent the drawer from sliding back toward the power source. The disc is mounted on the drawer so that it travels along adjacent to the rail, making it impossible to turn – and the fuse buss access door impossible to open – unless the drawer is pulled to the full-forward-and-latched position. When the drawer is pulled out, the weather doors cannot be closed.

Like other modules in Unit 14, the DD module contains two red fuse busses toward the back of the module. Tubular fuses connect to the front of the busses. In order to install the fuses, the maintenance worker must push inward toward the back of the module and against the fuse busses. It has been suggested that spare fuses were stored in a compartment below the fuse buss drawer, which is not accessible when the fuse buss drawer is pulled out.

Evidence from the accident scene, including photographs of the DD module and fuse buss drawer, show that the disc attached to the key lock was out of place following Steven Zuzula's electrocution. The disc's rotation is limited by a small metal stud attached to a spring plate adjacent to the disc. The stud is

aligned with a slot in the disc that, when properly functioning, prevents the disc's full rotation. However, after the accident, the stud was out of place, allowing the disc to rotate freely, with the effect that the key lock could be turned and the fuse buss access door opened without the drawer being pulled to its full-forward-and-locked position. In other words, with the disc mechanism in this condition, access to the fuse buss could be had with the drawer in its energized position, or with the drawer moving freely on its rails so that when an operator exerted the force necessary to snap the fuse into place he could push the drawer into the energized stabs in the back of the console.

The plaintiff has presented the testimony of John Fagan, who offers an opinion that the fuse buss drawer mechanism and interlock system was defectively designed. Fagan also provides his opinion as to how the accident occurred and how Steven Zuzula was electrocuted. The defendant counters with the testimony of Frank A. Denbrock, who opines that the unit was adequately designed in accordance with the state of the art at the time, and that the accident was caused by someone, perhaps the plaintiff's decedent, intentionally bypassing the redundant mechanical interlocking devices.

A.

The plaintiff's expert, John Fagan, is a professor of electrical engineering at the University of Oklahoma, where he has taught that subject for twenty-seven years. He is the holder of thirteen industrial patents on a variety of mechanical and electrical inventions. Prior to joining the university, Fagan was a design engineer at Mobil Oil from 1964 to 1967, where he designed nuclear magnetic resonance analysis equipment. Most of his time there was spent analyzing geological samples to determine the likelihood of oil. Fagan claims to have worked with high voltage equipment carrying about 10 kilovolts while at Mobile.

Fagan worked for Texas Instruments from 1967 to 1968. There, he designed the APS 115 radar, which the company then sold to the Navy for anti-submarine aircraft. This job did not involve high-voltage machinery. After one year at Texas Instruments, Fagan joined the United States Air Force as a design and development engineer. In this position, he worked on the control systems aboard military aircraft that involved power switching and cut-outs, but no high-voltage systems.

Fagan claimed to have worked on power-generating equipment similar to the machinery involved in this case while in Saudi Arabia, although little detail is provided as to what he was doing there. He also designed a high-voltage piece of equipment for the bakery industry, which is now sold to large commercial bakers throughout the United States. That item, called the Hydraplated Oiler System, “is a piece of equipment that is used in commercial bakeries that uses high voltage electricity to plate the bread pans with oil prior to . . . the dough piece being put in it.” Fagan Dep. at 71. The machine uses 25,000 volts of electricity. All of Fagan’s other patents and designs involve pressure equipment, additional baking equipment, hydraulics, and temperature measurement in hostile environments.

In order to formulate his opinions in this case, Fagan inspected and photographed the DD module in Unit 14 at MCV; read the depositions of nine witnesses and accompanying exhibits; reviewed photographs of the equipment taken shortly after the accident; reviewed the reports of the accident from MCV and OSHA; reviewed the equipment manuals, plant operating procedures, and the decedent’s training records; and inspected two pieces of analogous high-voltage switching equipment manufactured by Federal Pacific and General Electric, respectively, at two power generating facilities in Oklahoma. These later inspections occurred serendipitously when Professor Fagan was taking his electrical engineering students on a tour of power generating facilities as part of his course of instruction to these senior and

graduate students. Fagan was able to examine the switch gear, fail safe and interlock mechanisms of these comparable units, but he took no notes or photographs on these outings.

Mr. Fagan then prepared a report pursuant to Rule 26(a)(2) in which he set forth the following opinions: Mr. Zuzula's death was directly caused by the poor design of the opening systems of the switch gear; the interlock system was unsafe and defective when it left the factory because it would not prevent the accidental energizing of the fuse tabs when changing a fuse; there were no warning signs posted on the exterior of the metal clad switch gear of interior drawer; there was no passive interlock device that would interrupt power upstream to the switch gear if a drawer were opened while the gear was in operation; the drawer extraction system was poorly designed because it was difficult to engage the forward rail slot every time the drawer was opened; the location of the fuse tabs was ill-conceived because it required exertion of pressure in the direction of the power source when installing fuses; and the key safety interlock device was defective because it could be accidentally rendered inoperative, as it was found at the time of the accident.

Fagan stated that there were practical, alternative designs available when the unit was manufactured that would have been economically feasible and which had been in place on other equipment in the industry, such as a screw-type extraction device and a ratchet device. He suggested that ABB should have used an alternative "ratchet" design on the DD module that would have had multiple "cut outs" on the drawer side rail and which would have prevented drawer movement if Zuzula failed to pull the drawer to the fully open, grounded (safety) position. Fagan has not tested this theory or produced a ratchet design on a DD module. However, he illustrated this device by using a computer-generated photograph made by altering a photograph of the accident device. Next, Fagan claimed that ABB should have designed a better

keylock system. Finally, Fagan stated that ABB negligently failed to warn Zuzula of the dangers involved, but admitted that ABB did not violate any standards or regulations with respect to design or warnings. In reaching his opinions, Fagan relied in part on his experience and portions of the National Electrical Safety Code.

As for the mechanism of the accident itself, Fagan theorized as follows:

As Mr. Zuzula began to replace the fuse he had to access the supply of fuses below the drawer. He used the handles to push the drawer in a short distance in order to access the fuses. (This action would have been prevented by a properly working key latch.) Once he acquired a fuse he pulled the drawer out, but did not pull it out all the way so that the handle latches did not drop into position thus preventing the drawer from accidentally being pushed all the way into the **subical [sic]**. While pushing the fuse into place Mr. Zuzula had one hand on the fuse and the other on the drawer. When he pushed the fuse into place the drawer pushed back into the switchgear thus making contact with the energized parts.

Fagan Report, Pl.'s App. to Mtns. Ex. F. Fagan suggested that the interlock safety door was already ajar when Zuzula approached the DD module. Zuzula then changed the fuse in the DD module without ensuring that the drawer latched into the "safety" position.

The defendant challenges Fagan's opinions because it claims that he is not qualified. The defendant reasons that Fagan has not designed high-voltage equipment; most of his field work involved oil exploration, not electric capacitors and fuses; the bakery equipment he invented is not representative of the electrical equipment at a power generating station; he never designed a ratchet system like the one he advocates in his materials; and he completed his course work long before the DD module in this case was even manufactured. The defendant argues that Professor Fagan's methodology is flawed because he has done no studies or tests to indicate that the ratchet system he advocates would be any more effective in preventing death or electrocution on the DD module; his theories have not been published, nor have they

been subjected to peer review; the ratchet design he advocates was not generally accepted in the engineering community at the time ABB manufactured the DD module at issue in this case; and the only examination Fagan conducted of any ratchet design in the field was a casual examination of a few DD modules when taking his students on tours of other facilities. Finally, the defendant maintains that Fagan's testimony as to proper warnings is meritless in that he admitted that ABB violated no national rules or regulations in its design of the DD module, and his entire theory stems from his personal belief that the warnings on the DD module should have been "bigger and more explicit." Fagan's assertion that ABB violated the "spirit" of the rules by not doing so had no support for Fagan's theory other than his "own personal guidelines."

#### B.

The defendant's expert, Frank A. Denbrock, is also an electrical engineer. His resumé claims that he has over forty years of experience planning, designing, engineering, constructing, and managing electric power systems throughout the world. From 1949 through 1986 he worked for Gilbert/Commonwealth and retired from that company as a division manager concerned with the transmission and delivery of electricity and natural gas. Denbrock then worked as a consultant for D&A Consulting Engineers in Jackson, Michigan since 1986 and has testified as an expert witness for hire several times occasionally for plaintiffs but mostly for defendants. From 1969 through 1986, Denbrock worked in the fields of energy management and electrical systems, supervising professional, technical, and field-construction personnel. He is registered as a professional engineer in 24 states, belongs to numerous electrical engineering committees, and is a consultant to the Occupational Safety and Health Administration ("OSHA"). Denbrock has co-authored several articles and presentations on electrical engineering topics, including

submissions that address voltage and the electrical safety codes. He is also a vice-chairman on the National Electrical Safety Code Committee, which recommends warnings and safety standards for high-voltage components like the DD module at issue in this case.

Mr. Denbrock acknowledged that he had never designed equipment similar to that involved in the accident in this case. He has been involved in purchasing similar systems, however.

Denbrock prepared for his opinions by reviewing most of the same depositions that Professor Fagan reviewed; he read the pleadings and discovery material in the case; he reviewed the OSHA and MCV accident reports; he consulted personnel records of the decedent; reviewed the equipment manuals and plant operating procedures; and looked at photographs of the equipment furnished by an attorney together with an “inspection video.” Mr. Denbrock prepared a report pursuant to Federal Rule of Civil Procedure 26(a)(2)(B), to which is appended a three-page list of codes and standards; however, Denbrock testified at his deposition that he consulted none of these items in formulating his opinions, with the exception of the federal and Michigan Occupational Safety and Health Acts, which he claimed to know “by heart.” Dep. of F. Denbrock, at 18. Mr. Denbrock also visited the MCV facility in September 2001.

Mr. Denbrock offered opinions on both the conduct of the plaintiff and the design of the fuse buss drawer. He testified at his deposition that Steven Zuzula was not properly trained by his employer and that he failed to accept responsibility for his own safety. Denbrock also stated that the drawer was properly designed, adequate for its application, and safe to operate. In fact, Mr. Denbrock opined that there is no hazard involved in using the DD module drawer involved in this case, assuming that only qualified personnel would come in contact with the equipment. He stated that the interlocking devices were in proper working order when he inspected the drawer, but that the interlock could be defeated by using a tool to pry the

disc-limiting stud out of position. Denbrock concluded that the interlock safety devices were intentionally defeated at the time of the electrocution, that the drawer was partially or fully closed when Steven Zuzula attempted to insert the fuse, and that the fuse buss was energized when Zuzula came into contact with it because none of the three mechanical safety devices intended to prevent the drawer's contact with the energized stabs was engaged.

The plaintiff argues that Mr. Denbrock's opinions are inadmissible because they are not properly grounded in the facts of the case. The plaintiff highlights Denbrock's testimony that he has never designed a switchgear fuse box and that he did not even need to review the design of the switchgear fuse box at issue before rendering his opinions. When asked if the fuse-holders should have been arranged in a position such that downward force would be used to insert the fuses, rather than backward force in the same direction as that which would re-energize the drawer, Mr. Denbrock's answer was "I do not know . . . I haven't looked at such an application." When asked to state whether a photograph showed the so-called "half-moon disc" in the correct or incorrect position, Denbrock responded that he did not know. The plaintiff insists that Denbrock has no idea how the safety features on these devices operate. Denbrock also incorrectly testified that the so-called half-moon disc was designed so that it could be intentionally "overridden" as a safety feature rather than simply "cancelled" by turning the key. This testimony, the plaintiff contends, demonstrates that Denbrock's views are based on unsupported speculation, that his knowledge of the devices at issue is spotty at best, and that his testimony would not be helpful to the trier of fact.

II.

Any challenge to expert testimony must begin with Rule 702 of the Federal Rules of Evidence, which was modified in December 2000 to reflect the Supreme Court's emphasis in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999), on the trial court's gatekeeping obligation to conduct a preliminary assessment of relevance and reliability whenever a witness testifies to an opinion based on some sort of specialized knowledge. Rule 702 states:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

The language added by the amendment to Rule 702 restates *Daubert's* insistence on the requirements that an expert's opinion be based on a foundation grounded in the actual facts of the case, that the opinion is valid according to the discipline that furnished the base of special knowledge, and that the expert appropriately "fits" the facts of the case into the theories and methods he or she espouses. *See Daubert*, 509 U.S. at 591-93.

In addition, expert testimony is not admissible unless it will be helpful to the fact finder. Such testimony is unhelpful when it is unreliable or irrelevant, as the Court observed in *Daubert*, *see id.* at 591-92, and also when it merely deals with a proposition that is not beyond the ken of common knowledge. *See, e.g., Berry v. City of Detroit*, 25 F.3d 1342, 1350 (6th Cir. 1994) ("If everyone knows this, then we do not need an expert because the testimony will not 'assist the trier of fact to understand the evidence or to determine a fact in issue.'") (quoting Rule 702). Finally, before an expert may give an opinion, the

witness must be qualified to do so. *See id.* at 1348-50; *Morales v. Am. Honda Motor Co., Inc.*, 151 F.3d 500, 516 (6th Cir. 1998). The proponent of expert testimony must establish all the foundational elements of admissibility by a preponderance of proof. *Nelson v. Tennessee Gas Pipeline Co.*, 243 F.3d 244, 251 (6th Cir. 2001) (citing *Daubert*, 509 U.S. at 592 n.10).

An opinion is “reliable” from an evidentiary standpoint if it is “valid” according to the discipline upon which it is based. *See Daubert*, 509 U.S. at 590. In determining validity, the Court’s focus is on principles and methodology, not results. And there is no precise formula by which a court might deem a methodology “acceptable” or “unacceptable.” *Daubert* and its progeny have therefore not created a straitjacket, *Gross v. Commissioner of Internal Revenue*, 272 F.3d 333, 339 (6th Cir. 2001), but rather counsel a flexible approach, reconciling the “liberal thrust” of Rule 702 which “relax[es] the traditional barriers to opinion testimony” with the responsibility to “screen[] such evidence” in order to keep unreliable or invalid opinions from the jury. *See Daubert*, 509 U.S. at 588-89. *See also Jahn v. Equine Serv., PSC*, 233 F.3d 382, 388 (6th Cir. 2000).

*Daubert* suggested four criteria against which to measure the validity of the underlying principles and methods which undergird an expert’s opinion: whether the technique or theory is capable of being tested; whether it has been published and reviewed by peers in the relevant technical community; the potential or known rate of error yielded by the methodology; and whether the principle or theory has been generally accepted or shunned by the community of experts in the field. *See id.* at 593-94. This “list of specific factors neither necessarily nor exclusively applies to all experts or in every case” and the trial court enjoys “broad latitude” in determining whether any such factors are “reasonable measures of reliability in a particular case.” *Kumho Tire*, 526 U.S. at 141, 153. Other benchmarks of reliability have been

suggested, such as the existence and maintenance of standards governing the use of the technique; the presence of safeguards in the characteristics of the technique; whether the theory or technique is analogous to other scientific techniques whose results are admissible; the nature and breadth of the inference adduced; the clarity and simplicity with which the technique can be described and its results explained; the extent to which the basic data are verifiable by the court and jury; the availability of other experts to test and evaluate the technique; the probative significance of the evidence in the circumstances of the case; the care with which the technique was employed in the case; the existence of specialized literature; the novelty of the invention; the non-forensic use that is made of the technique; the extent to which the technique relies on the subjective interpretation of the expert; and the existence and maintenance of professional standards. *See* McCormick, *Scientific Evidence: Defining a New Approach to Admissibility*, 67 *Iowa L. Rev.* 879, 911-12 (1982); Marc A. Farley, “Legal Standards for the Admissibility of Novel Scientific Evidence,” *III Forensic Science Handbook*, pp. 14-16 (Prentice Hall 1993). This list is neither definitive nor exhaustive, and some or all of the factors may not be useful in an individual case. *See Nelson*, 243 F.3d at 251. But the court must utilize some derivative of these factors or a reasonable proxy to determine whether the opinion is based on “good science,” “good engineering,” “good medicine,” or the valid application of other specialized knowledge. *See, e.g. Clay v. Ford Motor Co.*, 215 F.3d 663, 676 (6th Cir. 2000) (Ryan, J., dissenting); *Gross*, 272 F.3d at 339 (acknowledging trial court’s wide latitude in determining factors to use in deciding reliability, but warning that the “call for broad discretion cannot be interpreted as an invitation for the trial judge to adopt an excessive level of generality in his gate-keeping inquiry.” (internal quote and citation omitted)). In other words, the expert must explain not only what she did to reach her conclusion, but why and how she arrived at her result as well. And in positing this explanation, the expert

must satisfy the trial court that she “employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” *Kumho Tire*, 526 U.S. at 152.

The expert’s qualification is a separate but related inquiry. It is “separate” because the proponent of the testimony is obliged to demonstrate the facets of the witness’ background that makes his knowledge “specialized,” that is, beyond the scope of the ordinary juror. *See De Jager Const., Inc. v. Schleiniger*, 938 F. Supp. 446, 449 (W.D. Mich. 1996). It is “related” because the qualifications must be relevant to the opinion sought. As the court explained in *Berry v. City of Detroit*:

[I]f one wanted to explain to a jury how a bumblebee is able to fly, an aeronautical engineer might be a helpful witness. Since flight principles have some universality, the expert could apply general principles to the case of the bumblebee . . . even if he had never seen a bumblebee. . . . On the other hand, if one wanted to prove that bumblebees always take off into the wind, a beekeeper with no scientific training at all might be an acceptable witness *if* a proper foundation were laid for his conclusions.

25 F.3d at 1349-50.

Thus, although a degree might be helpful in determining qualifications, since valid assumptions safely may be drawn from the general training one receives on the way to a diploma, *see id.* at 1349, it is neither a necessary nor a sufficient condition for qualification as an expert because the expert’s education must be relevant to the opinion, and qualification may be based on knowledge, skill, experience or training as well.

*See* Rule 702. As the Sixth Circuit has noted:

Rule 702 should be broadly interpreted on the basis of whether the use of expert testimony will assist the trier of fact. The fact that a proffered expert may be unfamiliar with pertinent statutory definitions or standards is not grounds for disqualification. Such lack of familiarity affects the witness’ *credibility*, not his qualifications to testify.

*Morales*, 151 F.3d at 500 (quoting *Davis v. Combustion Eng’g, Inc.*, 742 F.2d 916, 919 (6th Cir. 1984)). The court’s investigation of qualifications should not be onerous or inordinately exacting, but rather

must look to underlying competence, not labels. “[T]he expert need not have complete knowledge about the field in question, and need not be certain. He need only be able to aid the jury in resolving a relevant issue.” *Mannino v. Int’l Mfg. Co.*, 650 F.2d 846, 850 (6th Cir. 1981). Similarly, lack of hands-on experience is not fatal to a qualification inquiry if the focus of the opinion is within the scope of the expert’s special knowledge. *See Jahn*, 233 F.3d at 389.

With these rules in mind, the Court turns to the proffered testimony of the parties’ respective expert witnesses.

A.

John Fagan’s opinions focus on the design of the switching gear equipment and the mechanism of the injury. He arrived at his conclusions that the DD module in Unit 14 was defective by the application of general electrical and mechanical engineering principles, together with his conclusions which flowed from his investigation of the facts of the accident. He also inspected and tested the operation of the accident unit, particularly the interlocking safety mechanisms. There is no suggestion that the engineering principles utilized by Professor Fagan in arriving at his conclusions were novel, unique, or not generally accepted by the engineering community.

The Court finds that Fagan’s proposed testimony properly is grounded in principles of mechanics and electrical engineering. Fagan has examined the DD module in question and has also examined drawer concepts on analogous designs made for high-voltage use by General Electric and Federal Pacific. The fact that the drawer concepts he saw may not have been implemented in DD modules specifically does not preclude him from testifying as a matter of mechanics that there is nothing precluding a cross-over design. A design already in existence obviously has been tested, suggesting that “peer review” has been

conducted. The defendant has not come forward with any substantial criticism on Fagan's use of the General Electric design, rendering a nullity its complaints about any separate designs that Fagan himself may or may not have published for review by his peers. Furthermore, the questions of mechanics as to which Fagan would be testifying are quite logical and unlikely to be scientifically controversial: a sliding drawer can easily go back and forth, whereas a ratchet forces a drawer to go in only one direction unless specifically released. Fagan's testimony that a screw-type design (which he observed in an Oklahoma plant) would have had a similar effect also would appear to be uncontroversial. Likewise, the testimony relating to the placement and size of the warning signs is based on Fagan's knowledge of the risks inherent in working with high voltage, and his inspection of the equipment in which he discovered that special care must be taken to ensure that the manufacturer's designed interlock devices were not accidentally defeated.

Next, the testimony is relevant. The operative question in the plaintiff's defective design claim is whether Fagan's ratchet drawer system is a reasonable alternative design that would have precluded the accident in this case from happening. This goes to the heart of the case, and therefore is plainly relevant insofar as there is a requirement that the opinions "fit" the facts of the case in light of the matter in dispute.

Finally, Professor Fagan is eminently qualified. He has taught electrical engineering for over two decades, has worked with various mechanical devices, worked with 10,000 volts while with Amoco and designed a 25,000 volt machine for the bakery field. Although he does not appear to have worked extensively in the electrical industry, he is testifying as to the design of the *drawer* containing the electrical equipment, not the equipment itself. The question of whether to use a sliding drawer with two notches at each end or a progressive ratchet system is a straightforward matter of mechanics about which almost any engineer is qualified to opine, Fagan included. Lack on hands-on experience is not fatal to the opinions

here, since the technical knowledge base is derived from general engineering principles, which Professor Fagan has been teaching for twenty-seven years.

The Court finds that the opinion testimony described in the report and deposition of John Fagan qualifies for admission under Rule 702.

B.

The Court also finds that Frank Denbrock's testimony concerning the design of the DD module and the fuse drawer is admissible under Rule 702. Denbrock is a qualified electrical engineer who has served on committees that review design criteria of equipment similar to that involved in the electrocution here, and his opinions regarding the adequacy of the DD module design being in compliance with applicable standards is based on a straightforward comparison of the design to the standards. The plaintiff does not take serious issue with the witness's methodology. To the extent that Denbrock seems to rest his case on the notion that compliance with prevailing standards is all that counts, it may be easy to conclude that his testimony leaves something to be desired. That does not mean that his testimony, however, is unreliable or unhelpful to the jury. It should be remembered that an expert's testimony need not be correct, only reliable. *Nemir v. Mitsubishi Motors Corp.*, 200 F. Supp. 2d 770, 773 (E.D. Mich. 2002). Comparing an existing design to known and established electrical codes is a generally accepted methodology, which Denbrock applied to the facts of the case. Moreover, Denbrock's apparent unfamiliarity with all the facts concerning the condition of the interlock device as it was discovered shortly after the accident is not fatal to the admissibility of his opinion, which is based on the design features of the equipment. Denbrock offers an explanation of intentional misuse, which may not withstand the rigors of cross-examination; however,

his opinion extends beyond the realm of pure speculation and may be offered up for critical evaluation by the fact finder.

Mr. Denbrock's opinions as to the comparative fault of the plaintiff's decedent is quite another matter. Denbrock may be a qualified electrical engineer, but he has presented no qualifications as safety engineer, an expert on human factors, or being knowledgeable as to industrial training or plant safety. Moreover, his repetitive deposition testimony as to allocation of responsibility for worker safety rings out more as a statement of law rather than engineering. Finally, the Court finds that will not need expert assistance in dealing with the proposition that an individual is responsible for his own safety, or that prudence requires a worker to comply with prescribed lock-out procedures to ensure that power is shut off before coming in physical contact with a 11,400 volt circuit. Mr. Denbrock may testify as to the design features of the equipment, but may not opine as to fault with respect to the conduct of Steven Zuzula.

### III.

The Court finds that both witnesses will offer testimony that is admissible as opinion evidence under Rule 702 of the Federal Rules of Evidence. The proffered expert witnesses may testify at trial as to the design features of the accident equipment and comment on alternative designs and the placement of warnings. The defendant has not expressly stated an intention to offer the testimony Frank Denbrock on the issue of the comparative fault of Steven Zuzula, but if it did, the Court would not permit that testimony because it extends beyond the scope of that witness' expertise, and deals with a question of law that would not be helpful to the jury. Of course, Mr. Denbrock may give his opinions on the safety features of the equipment and his theory that the interlocking devices could be bypassed; but he may not give testimony allocating fault.

Accordingly, it is **ORDERED** that the defendant's motion to exclude the expert testimony of John Fagan [dkt # 52] is **DENIED**.

It is further **ORDERED** that the plaintiff's motion to exclude the expert testimony of Frank J. Denbrock [dkt # 41] is **DENIED**.

\_\_\_\_\_/s/\_\_\_\_\_  
DAVID M. LAWSON  
United States District Judge

Dated: June 3, 2003

Copies sent to: Karl J. Weyand, Esquire  
Dennis M. Goebel, Esquire